**AMENDMENTS TO THE CLAIMS:**

Please amend the claims as follows:

1. (Currently amended) An electrosurgical generator capable of varying both the output crest factor and output power of at least one waveform based on the changing impedance of tissue during electrosurgery, said electrosurgical generator comprising:

a processing unit for receiving at least one signal indicative of an output voltage and an output current of the at least one waveform, said processing unit executing a set of programmable instructions for determining the tissue impedance using the output voltage and output current of the at least one waveform and transmitting at least one waveform adjustment signal; and

a waveform generator for receiving the at least one waveform adjustment signal which alters the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform based on the determined tissue impedance, wherein said at least one waveform adjustment signal includes data to alter the duty cycle of the at least one waveform generated by the waveform generator in accordance with the following formula: $CF=[(1-D)/D]^{1/2}$, wherein D is the duty cycle and CF is the crest factor of the generated waveform.

2. (Previously presented) An electrosurgical generator as in Claim 1, wherein said processing unit further determines a corresponding output crest factor value and output power value of the at least one waveform for the determined tissue impedance by accessing at least one data structure.

3. (Previously presented) An electrosurgical generator as in Claim 2, wherein said at least one waveform adjustment signal includes data for setting the output crest factor and output power of the at least one waveform to the values provided by the at least one data structure.

4. (Original) An electrosurgical generator as in Claim 2, wherein said at least one data structure includes at least one look-up table.

5. (Cancelled).

6. (Previously presented) An electrosurgical generator as in Claim 1, wherein said at least one waveform adjustment signal includes data to alter at least one of the positive peak and the RMS value of the at least one waveform generated by the waveform generator in accordance with the following formula: $CF=V_{PEAK}/V_{RMS}$, where $V_{PEAK}$ is the positive peak of the at least one waveform and $V_{RMS}$ is the RMS value of the at least one waveform.

7. (Previously presented) An electrosurgical generator as in Claim 1, wherein said at least one waveform adjustment signal includes data to alter at least one of the duty cycle, the positive peak value, and the RMS value of the at least one waveform generated by the waveform generator.

8. (Original) An electrosurgical generator as in Claim 1, wherein said processing unit executes the set of programmable instructions automatically, in real time and continuously during electrosurgical activation.

9. (Previously presented) An electrosurgical generator as in Claim 1, further comprising at least one control for manually selecting a value for the output crest factor of the at least one waveform.

10. (Currently amended) A method for varying both the output crest factor and output power of at least one waveform generated by an electrosurgical generator based on the changing impedance of tissue during electrosurgery, said method comprising the steps of:

determining tissue impedance using an output voltage and an output current of the at least one waveform of the electrosurgical generator; and

altering the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform generated by said electrosurgical generator based on the determined tissue impedance, wherein said at least one waveform adjustment signal includes data to alter the duty cycle of the at least one waveform generated by the waveform generator in accordance with the following formula: $CF=[(1-D)/D]^{1/2}$, wherein D is the duty cycle and CF is the crest factor of the generated waveform.

11. (Previously presented) A method as in Claim 10, wherein said adjusting step comprises the step of determining a corresponding output crest factor value and output power value of the at least one waveform for the determined tissue impedance by accessing at least one data structure.

12. (Previously presented) A method as in Claim 11, wherein said adjusting step comprises the step of setting the output crest factor and output power of the at least one waveform to the values provided by the at least one data structure.

13. (Original) A method as in Claim 11, wherein said at least one data structure includes at least one look-up table.

14. (Canceled)

15. (Previously presented) A method as in Claim 10, wherein said adjusting step comprises the step of sending a signal to a waveform generator of said electrosurgical generator to alter at least one of the positive peak and the RMS value of the at least one waveform generated by the waveform generator in accordance with the following formula: $CF=V_{PEAK}/V_{RMS}$, where $V_{PEAK}$ is the positive peak of the generated waveform and $V_{RMS}$ is the RMS value of the at least one waveform.

16. (Previously presented) A method as in Claim 10, wherein said adjusting step comprises the step of sending at least one signal to a waveform generator of said electrosurgical generator to alter at least one of the duty cycle, the positive peak value, and the RMS value of the at least one waveform generated by the waveform generator.

17. (Canceled)

18. (Previously presented) A method as in Claim 10, further comprising the step of manually selecting a value for the output crest factor and a value for the output power of the at least one waveform.

19. (Original) A method as in Claim 10, wherein said method is performed automatically, in real time and continuously for the duration of the electrosurgery.

20. (Currently amended) An electrosurgical generator capable of varying both the output crest factor and output power of at least one waveform based on the changing impedance of tissue during electrosurgery, said electrosurgical generator comprising:

means for determining tissue impedance using an output voltage and output current of the at least one waveform generated by the electrosurgical generator; and

means for altering the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform generated by said electrosurgical generator based on the determined tissue impedance, wherein said at least one waveform adjustment signal includes data to alter the duty cycle of the at least one waveform generated by the waveform generator in accordance with the following formula: $CF=[(1-D)/D]^{1/2}$, wherein D is the duty cycle and CF is the crest factor of the generated waveform.

21. (Currently amended) A power source for generating an output voltage and an output current for an electrosurgical generator system, said electrosurgical system is capable of varying both the output crest factor and output power of at least one waveform based on the changing impedance of tissue during electrosurgery, and said electrosurgical system including a processing unit for receiving at least one signal indicative of the output voltage and the output current of the at least one waveform, said processing unit executing a set of programmable instructions for determining the tissue impedance using the output voltage and output current of the at least one waveform and transmitting at least one waveform adjustment signal; said electrosurgical system further including a

waveform generator for receiving the at least one waveform adjustment signal for altering the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform based on the determined tissue impedance, wherein said at least one waveform adjustment signal includes data to alter the duty cycle of the at least one waveform generated by the waveform generator in accordance with the following formula: $CF=[(1-D)/D]^{1/2}$, wherein D is the duty cycle and CF is the crest factor of the generated waveform.